

CLAIMS:

1. A fan, especially an equipment fan, comprising:
an external-rotor motor (103) having an internal stator (22) and an external rotor (34) separated therefrom by an air gap (52);
a bearing support tube (24) mounted on a base (46), the internal stator (22) being mounted on the support tube (24);
and
a pot-shaped part (4, 56; 58, 70) having one end connected to said base (46), forming a substantially fluid-tight annular space (54) enclosing said internal stator (22), and having a wall (56; 70) which extends in the manner of a canned motor through said air gap (52) between the internal stator (22) and the external rotor (34).
2. The fan of claim 1, wherein
an end of said bearing support tube (24) which is remote from said base (46) extends to a portion (6; 68) of said pot-shaped part (4; 68) and forms a substantially fluid-tight connection therewith, particularly by a plug-in connection.
3. The fan of claim 1, wherein the base (46) forms a substantially fluid-tight connection (10') with a fan housing (2).
4. The fan of one or more of the preceding claims, wherein said base (46) is fluid-tightly connected to the fan housing (2) by ultrasonic welding.
5. The fan of one or more of the preceding claims, wherein said pot-shaped part (4; 56) has a welding bead (10) for formation of a welded connection.

6. The fan of one or more of the preceding claims, wherein said bearing support tube (24) is formed with a recess (14) in which

a spacer (18),
a retaining element (20) for securing the shaft (44; sic), and
a plurality of rotary bearings (16)
are provided.

7. The fan of claim 6, wherein said recess (14) of the bearing support tube (24) is configured as a blind bore (14).

8. The fan of claim 6 or 7, wherein the recess (14) of the bearing support tube (24) is so configured, at its closed end, that it radially guides a retaining clip (20) placed therein (FIG. 6).

9. The fan of any of claims 6 to 9, wherein the rotor is configured as an external rotor (34) with a rotor bell (39; sic) onto which a rotor shaft (40) is secured; between the rotor bell (38) and an inner ring of one of the rotary bearings (16), a spring (44) is provided, which is compressible during assembly, to facilitate engagement of a retaining clip (20) placed in the recess (14) of the bearing support tube (24) into a circumferential groove (48) formed on the rotor shaft (44; sic).

10. The fan of claim 9, wherein the retaining clip (20) has at least one detent hook (21) which, in an assembled state, engages into the circumferential groove (48) formed on the rotor shaft (44; sic).

11. The fan of one or more of the preceding claims, wherein the motor is an electronically commutated motor (103) whose rotor (34) has a rotor magnet (36) and has a stator (22) with a stator lamination stack (26), the stator being arranged, at least partially, radially inside the rotor magnet (36).

12. The fan of claim 11, wherein the rotor (34) is arranged substantially in magnetic equilibrium relative to stator lamination stack (26), in order to reduce or avoid any axially directed magnetic force between rotor (34) and stator (22).

13. The fan of any of the preceding claims, wherein the pot-shaped part (6; 56) is integrally formed with the housing (2) of the fan.

14. The fan of any of claims 1 to 12, wherein the base (46) connected to the bearing support tube (24) is integrally formed with the housing (2) of the fan.

15. The fan of any of the preceding claims, wherein a fluid-tight connection between the pot-shaped part (58, 70) and base (46) is achieved by adhesion, welding, or other standard connecting methods.

16. The fan of any of the preceding claims, wherein the rotor (34) has a shaft (40) which is axially fixed by a securing ring (60) which engages into a circumferential groove of the shaft (40).